Weather & Gardening

Many of the plants we buy contain tags indicating that they are **annual, perennial, temperate,** or **tropical,** illuminating how plants will respond to weather conditions (temperature, rainfall, wind, light and surrounding structures). While you may not be able to control these conditions, you can fine-tune the location (shady vs. sunny) of the plant that is suggested for the specified zone considering the light, heat and the plant hardiness zone information of your area. This brochure should help you, the gardener, understand how local weather and climate can be utilized for successful gardening.

How do I utilize Weather and Climate information for successful gardening?

NOAA's National Weather Service
Climate Services Program

Quad Cities Weather Forecast Office
9050 Harrison Street
Davenport, Iowa 52806-7326

Phone: (563) 386 - 3976
Web: http://weather.gov/quadcities
E-mail: w-dvn.webmaster@noaa.gov

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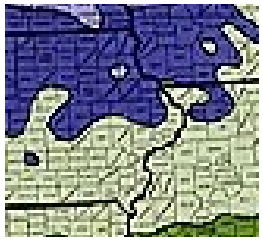
How does weather affect my garden?

Weather is the ultimate factor determining whether plants will thrive or perish. Temperature, moisture and their extremes have a direct effect on the survival of plants. Climate is the main reason plants favor certain places to grow. Climate is the behavior of the weather which can be described by both average values and extremes over a period of time. Knowing the local climate is a key factor to successful gardening.

What are the key elements of the weather for gardening?



USDA Plant Hardiness Zones

Freezes: Freezing temperatures determine the length of the growing season. The United States Department of Agriculture (USDA) uses Plant Hardiness Zones which factors in average winter minimum temperatures. The Plant Hardiness Zone for the Burlington area is Zone 5, where minimum winter temperatures can fall to between minus 10 to minus 20 °F. Selecting perennial plants for your garden should start with insuring they will survive the winter by utilizing the USDA Hardiness Zone Map. Annuals, plants that live only for one year or one season, such as petunias or vincas, are capable of living years in a frost-free environment. Knowing the first and last freeze days for your location can help in successful gardening. The following table shows the last day of spring freeze and the first day of fall freeze with associated risks (chance of freeze between these dates) in Burlington. For further information on the USDA plant Hardiness zones:

http://www.usna.usda.gov/Hardzone/hzm-sm1.html

Last Day of Freeze	Risk	First Day of Freeze
May 1	10%	October 2
April 16	50%	October 17
April 2	90%	November 4

Heat: Extreme heat stresses plants and can even result in their demise. The American Horticultural Society (AHS) determined Heat Zones based on the average number of days per year with temperatures greater than 85°F. The AHS Heat Zone for the Burlington area is 6. Many plants have the Heat Zone coding information on the tag. Make sure to select plants that will be suitable for your zone.

Wind: Transpiration from the plants and evaporation from the soil causes significant moisture loss. Since wind enhances evaporation and transpiration, on a hot day the wind will increase water needs, which could dehydrate the plant.

Knowing the average wind speed and direction in your local area can help you plan for better gardening. You can reduce the air circulation by building fences and planting hedges. The annual average wind for Burlington is 10 mph from the south. However, you can make a more informed decision by consulting the National Weather Service web site for current wind conditions as well as the forecast for areas around Burlington:

http://weather.gov/quadcities

Moisture: Plant tissues must contain enough water to keep their cells active. Some plants may be advertised as drought-tolerant, but no plant can survive becoming completely dry. Too much water can cut off the oxygen supply to the roots. Knowing the local seasonal rainfall averages can help determine which plants may need additional water or special planting requirements to avoid overwatering. The Burlington area receives a total of about 38 inches of precipitation annually. The table on the right is a monthly break-down of the 38 inches.

J	F	M	A	M	J	J	A	S	O	N	D
1.31	1.54	2.96	3.61	4.40	4.45	4.48	3.86	3.60	2.91	2.72	2.10

Where can I get local soil temperature, soil moisture and evaporation information ?

Iowa State University maintains an agricultural weather web site that contains useful weather and soil data that gardeners may find helpful:

http://mesonet.agron.iastate.edu